

CLAIMS

What is claimed is:

1. A calibration standard prepared by:  
    providing a substrate;  
    forming a silicon matrix on said substrate, said silicon matrix having an element in a selected element:silicon atomic ratio;  
    determining an atomic concentration of said element in said silicon matrix; and  
    formulating a calibration curve by plotting said atomic ratio versus said atomic concentration of said element in said silicon matrix.
2. The calibration standard of claim 1 wherein said substrate comprises a silicon wafer substrate.
3. The calibration standard of claim 1 wherein said element is an element selected from the group consisting of boron, indium, arsenic and copper.
4. The calibration standard of claim 3 wherein said substrate comprises a silicon wafer substrate.

5. The calibration standard of claim 1 wherein said determining an atomic concentration of said element in said silicon matrix comprises determining an atomic concentration of said element in said silicon matrix using laser ablation-inductively coupled plasma mass spectrometry.

6. The calibration standard of claim 5 wherein said substrate comprises a silicon wafer substrate.

7. The calibration standard of claim 5 wherein said element is an element selected from the group consisting of boron, indium, arsenic and copper.

8. The calibration standard of claim 7 wherein said substrate comprises a silicon wafer substrate.

9. A calibration standard prepared by:  
providing a substrate;  
forming a silicon matrix on said substrate by providing methylsiloxane and an element, mixing said element with said methylsiloxane in a selected element:silicon atomic ratio, coating said methylsiloxane on said substrate and baking said substrate;

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determining an atomic concentration of said element in said silicon matrix; and

formulating a calibration curve by plotting said atomic ratio versus said atomic concentration of said element in said silicon matrix.

10. The calibration standard of claim 9 wherein said substrate comprises a silicon wafer substrate.

11. The calibration standard of claim 9 wherein said element is an element selected from the group consisting of boron, indium, arsenic and copper.

12. The calibration standard of claim 11 wherein said substrate comprises a silicon wafer substrate.

13. The calibration standard of claim 9 wherein said determining an atomic concentration of said element in said silicon matrix comprises determining an atomic concentration of said element in said silicon matrix using laser ablation-inductively coupled plasma mass spectrometry.

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14. The calibration standard of claim 13 wherein said substrate comprises a silicon wafer substrate.

15. The calibration standard of claim 13 wherein said element is an element selected from the group consisting of boron, indium, arsenic and copper.

16. The calibration standard of claim 15 wherein said substrate comprises a silicon wafer substrate.

17. A method of preparing a calibration standard, comprising the steps of:

providing a substrate;

forming a silicon matrix having an element in a selected element:silicon atomic ratio on said substrate;

determining an atomic concentration of said element in said silicon matrix; and

formulating a calibration curve by plotting said atomic ratio versus said atomic concentration of said element in said silicon matrix.

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18. The method of claim 17 wherein said element is an element selected from the group consisting of boron, indium, arsenic and copper.

19. The method of claim 17 wherein said determining an atomic concentration of said element in said silicon matrix comprises determining an atomic concentration of said element in said silicon matrix using laser ablation- inductively coupled plasma mass spectrometry.

20. The method of claim 17 wherein said forming a silicon matrix having an element in a selected element:silicon atomic ratio on said substrate comprises providing methylsiloxane and said element, mixing said element with said methylsiloxane in a selected element:silicon atomic ratio, coating said methylsiloxane on said substrate and baking said substrate.